

ADDITIONS TO THE GENUS TAXIPHYLLUM

(HYPNACEAE, MUSCI)

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The genus Taxiphyllum has seemed rather lacking in characters and has been subject to many mistreatments during bryological history. There has been confusion with other rather flattened ecostate forms such as Plagiothecium and Isopterygium which are not really closely related. Attempts to fully distinguish the genus have usually involved the structure of the broad pseudo-paraphyllia around the lateral buds which are distinct from the types found in Isopterygium but which are not always present and are not distinct from the types in many other pleurocarpous mosses. The present concept of the genus is summarized well by Ireland (1969) for North America. The only more recent addition is Taxiphyllum andersonii (Bartr.) Crum.

The species of Taxiphyllum are flattened with usually spreading lateral leaves and a vestigial double costa. In addition, most of the species have somewhat shortened apical cells and the leaf cells project on the upper ends abaxially. The alar cells provide a significant lack of differentiation. The combination of characters provides the impression of a rather distinctive genus with broader limits than generally recognized. Recently, specimens and descriptions have been noted that indicate the genus Taxiphyllum should be expanded to include an additional pair of species presently placed in the genus Pterigynandrum.

Under Pterigynandrum filiforme Hedw. there is a variety mexicanum Thér. and in the Eastern United States there is Pterigynandrum sharpii Crum & Anderson. The latter species, a renaming of the enigmatic Hylocomium splendens var. tenue Sharp, was placed in Pterigynandrum by Crum and Anderson (1967) with admitted reservations and at the same time the non Pterigynandrum nature of var. mexicanum was fully recognized. Both entities lack the fully developed quadrate alar cells of Pterigynandrum and they have more irregular cells on the apical margins. True Pterigynandrum has much more prominent almost bulbous papillae on the ends of its leaf cells, often on the lower ends as well as the upper, a feature not seen in either P. sharpii or the variety mexicanum. The alar cell structure of Pterigynandrum filiforme is basically different and agrees with peristome characters in relating the genus to the Entodontaceae. The variety mexicanum and P. sharpii have no evident relationship to that family.

A recent collection by Dana Griffin from South America has shown the same combination of characters noted above in the

disparate element of Pterigynandrum. The slight differences of leaf shape, brevity of leaf tip and serrulation indicate only species, not generic differences. The Griffin specimen (718; VENEZUELA: MERIDA: Distrito Libertador: El Maciegal, cuenca de la quebrada "La Pedregosa," afluyente del río Chama. Bosque residual. Plantas sobre roca en lugar semi-soleado. 1980 m) is apparently a second collection of Taxiphyllum machrisianum Crum, originally described from Goiás in central Brazil (1957). At the time of description Crum noted the primary anomalous feature of the species as a Taxiphyllum, the erect-spreading rather than very widely spreading leaves.

The proper generic placement of the above species cannot be resolved without consideration of an additional genus, the one in which Taxiphyllum andersonii was originally described. The genus Glossadelphus has been broadly interpreted to include some small mosses of the general Taxiphyllum type.

The genus Glossadelphus as established by Fleischer (1915-1922) consisted of two distinct groups of species. The first section, Colophyllum Fleisch., had species with leaf tips rounded to slightly emarginate and leaf cells when papillose often bearing papillae in series over the cell lumens. The apical cells are very irregular with both adaxial and abaxial projections. The papillose species of this group have much the appearance of Hypnella in the Hookeriaceae and have the same inclination toward counterpart species or phases differing in no way but presence or absence of papillae. The common papillose American species of Glossadelphus as well as at least one African species have actually been redescribed or described as Hypnella on the basis of non-fruiting specimens (Robinson 1965, 1967). The species of this section form the most distinctive element of Glossadelphus and I propose that the common American species Hypnum truncatulum C.Müll. be recognized as the type of the genus.

Also included in Glossadelphus by Fleischer was a second section Anastigma (Card.) Fleisch., transferred from Taxithelium. All the forms resembling Taxiphyllum belong in this section. The species are rather like typical Glossadelphus in general aspect with similar size and similar erect-spreading rather blunt leaves. The details of the leaves, however, suggest a very different element. Iwatsuki (1967) has pointed out that two species often placed in this group have a single very enlarged cell at the basal corner and belong in the genus Ectropothecium, E. zollingeri (C.Müll.) Jaeg. and E. obtusulum (Card.) Iwats. Material seen in this study under the name of another species of the group, Glossadelphus prostratus (Doz. & Molke.) Fleisch., lacks the large basal cell and is more like the American species. Further examination of this and other Eastern Hemisphere species may confirm relationship to Taxiphyllum machrisianum. It is the present opinion that such material must be excluded from the

genus Glossadelphus and that Crum was correct in the generic placement of his South American species. The American species I would place in this group of the genus Taxiphyllum include:

Taxiphyllum machrisianum Crum, Contr. Sci. Los Angeles Mus. 18: 5. 1957.

Taxiphyllum mexicanum (Thér.) H. Robinson, comb. nov. Pterigynandrum filiforme var. mexicanum Thér., Rev. Bryol. n. ser. 1: 9. 1928.

Taxiphyllum sharpii (Crum & Anderson) H. Robinson, comb. nov. Pterigynandrum sharpii Crum & Anderson, Bryologist 70: 99. 1967. Hylocomium splendens var. tenue Sharp, Bryologist 36: 21. 1933.

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